

6585

R-023-208 .11

URANYL NITRATE HEXAHYDRATE NEUTRALIZATION PROJECT

02/01/95

DOE-0519-95
DOE-FN EPAS
3
LETTER



Department of Energy
Fernald Environmental Management Project
P. O. Box 398705
Cincinnati, Ohio 45239-8705
(513) 648-3155

FEB 1 1995
DOE-0519-95

Mr. James A. Saric, Remedial Project Director
U.S. Environmental Protection Agency
Region V - 5HRE-8J
77 W. Jackson Boulevard
Chicago, Illinois 60604-3590

Mr. Tom Schneider, Project Manager
Ohio Environmental Protection Agency
401 East 5th Street
Dayton, Ohio 45402-2911

Dear Mr. Saric and Mr. Schneider:

URANYL NITRATE HEXAHYDRATE NEUTRALIZATION PROJECT

The purpose of this letter is to inform you of the various activities that are being conducted on behalf of the Uranyl Nitrate Hexahydrate (UNH) Neutralization Project at the Fernald Environmental Management Project (FEMP). At this time the greatest uncertainty involves the piping being used for the project as a result of the weld that failed after the pipe had been hydrostatically tested.

Welds on the stainless steel pipe will be tested using Ultrasonic Testing (UT). Twenty percent of the welds that were made by each welder will be tested employing UT. The twenty percent is based on requirements listed in American Society of Mechanical Engineers (ASME) B31.3. This testing will take from one to eight weeks, depending on the productivity of the tester and the results that are observed during testing. If a bad weld is found, all of the remaining welds that individual made will be tested. The carbon steel pipe that would be used to transfer neutralized slurry from Plant 2/3 to Plant 8 will also have its welds checked. Either visual inspection using a camera on the inside of the pipe or UT will be used to inspect the welds for the carbon steel pipe. If the welds are sound, there will be adequate justification to support a criteria deviation from the United States Department of Energy (DOE) Order 6430.1A requirement that secondary containment and detection be used for pipe that is used for nuclear material. Alternatives are being evaluated in case the piping system is unusable. Alternatives are also being evaluated to complete neutralization of the UNH in an expedited manner, even if the piping system is sound.

Several variations are being developed using a pipe in a pipe. This concept would use a three inch diameter primary pipe and a six inch diameter secondary pipe. Materials being considered for the primary pipe are three inch diameter schedule 40 steel pipe, three inch diameter Chlorinated Polyvinyl Chloride (CPVC), three inch diameter High Density Polyethylene (HDPE), and a hose. Materials being considered for the secondary pipe are six inch diameter CPVC and six inch diameter HDPE. The pipe would be laid on the ground or in the existing pipe rack. Other alternatives being evaluated are installing a sleeve around the pipe or a liner inside the pipe.

The following alternatives are also being developed:

- An alternative that would use a vendor on site, such as Chem Nuclear Systems, to treat and solidify the UNH is also being pursued.
- An evaluation of a trucking alternative that would move UNH from storage tanks to Plant 2/3 and then would move the neutralized slurry from Plant 2/3 to Plant 8.
- An evaluation of storing neutralized slurry in storage tanks instead of processing through Plant 8. The advantage of this option would be that neutralization of UNH would be completed much sooner after processing begins than under the present plan.
- An evaluation of transporting UNH to an off-site vendor for processing.
- An evaluation of refurbishing existing pipe.

Information on each of these alternatives will be provided to you as it is developed. This information will include feasibility, schedule, and cost.

A decision was made last week to utilize the progressive cavity pumps that were originally specified for the project. The progressive cavity pumps will be installed during the next several weeks.

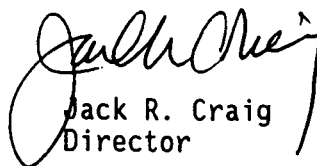
Fernald Environmental Restoration Management Corporation (FERMCO) has developed a program to repair UNH leaks. As of today there are sixty-eight identified UNH leaks. Of these identified leaks there are only twenty-two leaks at this time. FERMCO maintenance has repaired twenty leaks and a vendor has repaired four leaks. Twenty-two identified leaks have stopped without action being taken. Several alternatives are being considered to further reduce leaks, including a possible transfer of UNH from tank D1-1 to tank D1-2 in Plant 2/3 digestion and possibly freezing UNH in the pipe using nitrogen.

These activities are being conducted concurrently. FERMCO is making every effort to begin and complete neutralization of UNH as quickly as possible, with safety of personnel and the environment being given the highest priority.

Page 3

If you have any questions, please contact Chris White at (513) 648-3172.

Sincerely,



Jack R. Craig
Director

FN:White

cc w/enc:

K. H. Chaney, EM-423/QO
D. R. Kozlowski, EM-423/QO
G. Jablonowski, USEPA-V AT-18J
J. Kwasniewski, OEPA-Columbus
P. Harris, OEPA-Dayton
M. Proffitt, OEPA-Dayton
J. Michaels, PRC
R. Cohan, GeoTrans
T. Hagen, FERMCO/65-2
P. F. Clay, FERMCO/19
F. Bell, ATSDR
AR Coordinator, FERMCO

cc w/o encs:

R. L. Glenn, Parsons
J. W. Thiesing, FERMCO